In the Claims

1. (Original) A method of processing video data, comprising:

providing input content data, the content data representing video and comprising plural samples, each having a value;

providing plural symbol auxiliary data that is to be steganographically encoded within the content data, to yield encoded content data;

receiving first data related to human perception attributes of the content data;

generating intermediate data that is a function of said plural symbol auxiliary data and said first data, the intermediate signal including an element corresponding to each of plural of the content data samples, including repeating the plural symbol auxiliary data in the intermediate data and varying representations of the plural symbol auxiliary data according to a key;

steganographically encoding the content data with the auxiliary data by changing the values of samples in a version of the input content data in accordance with elements of the intermediate signal corresponding thereto, thereby yielding the encoded content data.

2. (Original) The method of claim 1 in which the plural symbol auxiliary data includes copy control data.

3. (Original) The method of claim 1 that further includes:

decoding auxiliary data from a version of the encoded content data; and

controlling a record capability of an associated apparatus in accordance with at least a portion of the decoded auxiliary data.

4. (Original) The method of claim 1 that includes decoding at least a portion of the auxiliary data from the encoded content using dedicated hardware circuitry in a consumer electronic device.

5. (Original) The method of claim 4 wherein at least a portion of the auxiliary data from the encoded content is decoded by performing plural statistical analyses on the encoded content to compute statistical characteristics from which values of the plural symbol auxiliary data are derived.

6. (Original) The method of claim 1 that further includes:

compressing the encoded content data;

decompressing the compressed content data;

the aforesaid compressing and decompressing being lossy, wherein the decompressed content data is not identical to the encoded content data; and

decoding the auxiliary data from the decompressed content data notwithstanding the losses associated with said lossy compressing/decompressing operations.

7. (Original) The method of claim 6 that further includes controlling a record capability of an associated apparatus in accordance with at least a portion of the decoded auxiliary data.

8. (Original) The method of claim 1 in which the changing comprises performing binary addition operations between corresponding content data samples and elements of the intermediate data.

9. (Original) The method of claim 1 in which the encoding occurs with a representation of the content data in a spatial domain, rather than in a transformed, spatial frequency domain.

10. (Original) The method of claim 1 in which at least some of said auxiliary data serves as an index or pointer to remote data stored at a remote location, said remote data relating to said content.

11. (Original) The method of claim 1 in which said changing includes increasing the values of at least some of said samples, and decreasing the values of others of said samples.

12. (Original) The method of claim 1 which includes encoding a calibration signal in the encoded content data together with said auxiliary data, said calibration signal having known properties facilitating identification thereof by a recipient of the encoded content data, said encoded calibration signal being substantially imperceptible to a human viewer of the encoded video.

13. (Original) The method of claim 12 in which the calibration signal has a known spectral attribute.

14. (Original) The method of claim 13 that includes decoding the encoded content data, said decoding including finding the calibration signal by reference to said known spectral attribute.

15. (Original) The method of claim 12 in which the calibration signal identifies of the start of the auxiliary data as encoded in the encoded content data.

16. (Original) The method of claim 12 in which the calibration signal is distinct from the auxiliary data.

17. (Original) The method of claim 12 in which the calibration signal comprises a data sequence.

18. (Original) The method of claim 12 in which the calibration signal enables the auxiliary data to be recovered from an encoded content data without reference to a reference version of the input content data.

19. (Original) The method of claim 18 in which the calibration signal enables the auxiliary data to be recovered from a corrupted encoded content data without reference to the

input content data, wherein the corrupted encoded content data is the output data corrupted by a process selected from a group consisting of: misregistration of the encoded content data, scaling of the encoded content data, and conversion of the encoded content data from digital to analog and back to digital again.

20. (Original) The method of claim 12 in which the calibration signal, the auxiliary data, and the first data are processed to form the intermediate data.

21. (Original) The method of claim 12 in which the calibration signal comprises a plurality of data elements, each of said data elements also being included in said auxiliary data, wherein said calibration signal is concatenated with the auxiliary data and embedded therewith in the encoded content data.

22. (Original) The method of claim 12, which includes recovering the auxiliary data from the encoded content data without reference to the original content data.

23. (Original) The method of claim 1 in which said changing is performed without transforming the input content data to a complementary frequency domain representation.

24. (Original) The method of claim 1 which includes transforming data corresponding to the encoded content data into a frequency domain representation for analysis during decoding.

25. (Original) The method of claim 1 which includes generating the intermediate data as a function of said plural symbol auxiliary data, said first data, and additional data.

26. (Original) The method of claim 25 in which said additional data is noise-like data.

27. (Original) The method of claim 1 in which each changed sample in the encoded content data corresponds to one, and only one, symbol of the auxiliary data.

28. (Original) The method of claim 1 wherein the plural symbol auxiliary data includes control data operable to control a record capability of an associated apparatus, and at least a portion of the auxiliary data from the encoded content is decoded by performing statistical analyses on data related to the encoded content to compute statistical characteristics from which values of the plural symbol auxiliary data are derived.

29. (Original) The method of claim 1 in which at least certain of said changed samples in the encoded content data correspond to plural symbols of the auxiliary data.

30. (Original) The method of claim 1 in which plural neighboring samples in the encoded content data are all encoded in accordance with one same symbol, and only said one same symbol, of the auxiliary data.

31. (Original) The method of claim 1 that includes generating said first data related to human perception attributes of the content data.

32. (Original) The method of claim 31 in which the first data includes plural elements, each corresponding to a sample of the content data.

33. (Original) The method of claim 1 in which said symbols comprise bits, each having a value of "0" or "1."

34. (Original) A computer program stored on a tangible physical medium, including instructions for causing a computer programmed thereby to perform the method of claim 1.

35. (Original) The method of claim 1 comprising step for encoding the content data with the auxiliary data.

36. (Original) The method of claim 1 wherein the input content data is of a first content type, and the intermediate data is produced using a set of data that is also of said same first content type.

37. (Original) The method of claim 1 that further includes decoding the plural symbol auxiliary data from the encoded content data.

38. (Original) The method of claim 37 in which the decoding comprises:

determining statistical characteristics of the encoded content data; and

based on said statistical characteristics, determining values of said plural symbol auxiliary data.

39. (Original) The method of claim 37 in which the decoding includes performing plural statistical analyses on the encoded content data.

40. (Original) The method of claim 1 that includes receiving global gain data from a user-set control, and using said global gain data in said encoding.

41. (Original) The method of claim 1 in which the first data comprises gain data, and generating the intermediate data includes:

modulating a message carrier signal with the auxiliary data, including receiving gain data relating to the content signal, and scaling the message carrier signal in accordance with said gain data; and

adding the scaled signal to the content data.

42. (Original) The method of claim 41, comprising computing said gain data from samples of the content data.

43. (Original) The method of claim 41, wherein the message signal modulates a statistical characteristic of a selected set of samples of the content signal, such that decoding is enabled by analyzing the statistical characteristic of the encoded content data.

44. (Original) In a method of encoding a first image within a second image, an improvement comprising:

applying an encryption algorithm to the first image, to yield a set of noise-like data;

associating with each of several pixels in the second image, a portion of the set of noise-like data; and

for each of said several pixels in the second image, summing the value thereof with the portion of the noise-like data associated therewith.

45. (Original) The method of claim 44 that includes:

associating with each of said several pixels in the second image a scale value; and

scaling the portion of the noise-like data with a respective scale value prior to said summing.

46. (Previously Presented) A video processing method comprising:

(a) receiving video content, said content comprising first and associated second data, said first data representing video picture elements to be rendered for display to a consumer, the second data not representing video picture elements to be rendered for display to the consumer;

(b) decoding information steganographically encoded in the first data; and

(c) making a determination concerning said video by reference to said decoded information and said second data.

47. (Previously Presented) The method of claim 46 in which said determination relates to whether a recording capability should be enabled or disabled.

48. (Previously Presented) The method of claim 46 in which (c) includes checking reliability of said second data by reference to said decoded information.

49. (Previously Presented) The method of claim 46 in which the received first data is steganographically encoded by a method that adapts encoding of the information to features of the video, to reduce visible distortion of the video.

50. (Previously Presented) The method of claim 46 in which the received first data is steganographically encoded by a method that manifests said encoding of the information as an increase in luminance of certain video picture elements, and as a decrease in luminance of certain other video picture elements.

51. (Previously Presented) The method of claim 46 in which the second data comprises video management information.

52. (Previously Presented) The method of claim 46 in which the second data comprises metadata related to said visual information.

53. (Previously Presented) The method of claim 46 in which said first and second data are received in a data structure comprising header data and compressed video information.

54. (Previously Presented) The method of claim 53 in which said data structure comprises a file.

55. (Previously Presented) In a data structure stored in a tangible medium, the data structure including first and second data, the first data representing video to be rendered for display to a consumer, the second data comprising associated information that does not represent video to be rendered for display, an improvement wherein the first data conveys a steganographically encoded signal useful in assuring reliability of said second data.

56. (Previously Presented) The data structure of claim 55 in which the first data represents video in compressed form.

57. (Previously Presented) The data structure of claim 55 in which the first data represents video in MPEG compressed form.

58. (Previously Presented) The data structure of claim 55 in which the first data comprises a stream of video.

59. (Previously Presented) The data structure of claim 55 in which the second data comprises administrative information concerning said video.

60. (Previously Presented) The data structure of claim 55 in which said steganographic encoding comprises subtle changes to the luminance of the video.

61. (Previously Presented) The data structure of claim 60 in which said subtle changes in luminance are not all uniform, but rather are adapted to the video so as to reduce visibility of said the encoded signal.

62. (New) A method of processing video data, comprising:

providing input content data, the content data representing video and comprising plural samples, each having a value;

providing plural symbol auxiliary data that is to be steganographically encoded within the content data, to yield encoded content data;

receiving first data related to human perception attributes of the content data at different locations therein;

generating pseudo-random intermediate data corresponding to the plural symbol auxiliary data, the intermediate data including an element corresponding to each of plural of the content data samples;

scaling said intermediate data in accordance with the first data; and

steganographically encoding the content data with the auxiliary data by changing the values of samples in a version of the input content data in accordance with elements of the scaled intermediate signal corresponding thereto, thereby yielding the encoded content data;

wherein the relative strength of the encoding varies in accordance with local characteristics of the video.

63. (New) The method of claim 62, wherein said steganographic encoding comprises summing elements of the scaled intermediate signal with samples of the content data corresponding thereto.

64. (New) The method of claim 62 that includes generating the first data by reference to the content data.

65. (New) The method of claim 62 that includes computing the first data from the content data using a non-linear function.

66. (New) The method of claim 62 wherein each of said symbols is a binary bit.